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PRESSED-STEEL MACHINE HANDLES

(From *Machinery*, February, 1923)

An innovation in the manufacture of machine handles has recently been made. The new method consists of drawing the handles from steel. By this method a handle is produced which is light, uniform in shape, and of adequate strength.

There are two types of these handles: one has a shank integral with the handle, and the other has a loose spindle around which the handle can rotate freely.

The making of a handle, step by step, is given as follows: All sizes, eleven in all, are made from strip steel, varying in thickness from 0.062 to 0.100 inches. There are sixteen operations required to finish the product. The first operation is blanking and drawing on a double action press, which is followed by annealing. Then there are two redrawing operations, followed by annealing. In the course of manufacture, the stock becomes thickened from the small diameter of the handle to the shank. If the thickening of the handle is not taken care of the handle is likely to buckle in the final up-setting operations and it would be practically impossible to maintain its shape. Therefore, to remedy this the next redrawing operation is performed with a punch designed to thin the shell at the upper end. The shell is then squared on the end and annealed. If the handle is the loose-spindle type, the next operation is slipping in a pressed steel bearing.

The necking operations which are next are the same for both types of handles. There are four necking operations produced by reverse drawing." Between the first and the last two necking operations the shells are annealed. In the case of the loose spindle handle, these operations result in closing the large end of the handle so that the bearing is prevented from coming out.

The next step in the sequence of operations on the type of handle with the integral shank, is drawing the shank end to the finished diameter. In this operation, the shell is reversed from the position occupied during the necking operations, and a punch is used which fits over the correct diameter and compresses the end to the proper size.

In the final upsetting process, a safety guard is used to assure that the handle will be seated vertically in the die. In this operation the handle is shaped. The shoulders are formed and the handle is spread to give it a reverse curve at the top where the shank begins.

The entire operation of making the machine handles is known as the Rockwood process. The weight of pressed steel handles is about one-half that of solid machine handles made from bar stock.—*Sibley Journal*.